

T News Letter **TDARS**

G3ZME
G6ZME

TELFORD AND DISTRICT AMATEUR RADIO SOCIETY

www.TDARS.org.uk

FOUNDED 1969

www.TelfordHamfest.co.uk

Issue 289

50th Anniversary 1969-2019

June/July 2019

www.TDARS.org.uk

Programme

www.telfordhamfest.org.uk

June 12 6 metre Trophy preparation meeting + Social Evening

June 15-16 (weekend) 50MHz Trophy Contest from Long Mynd (i/c G0UFE)

June 19 HF on the Village Field—try to contact ON/M0PLA in Belgium

June 26 VHF NFD Preparation evening. i/c G0UFE / G3UKV

July 3 Local walking DF Hunt #2. Start LWVH at 7:30pm (note: 1st in month)

July 6-7 (weekend) VHF NFD from the Long Mynd IO82NN i/c G0UFE

July 10 Committee Meeting and GX3ZME on the air. (7:30pm CM)

July 13—Saturday—LWVH Annual Fete with Special Station GB50TEL

July 17 Practical Workshops: Part 2 (G6UDX, M0PLA, G3UKV)

July 24 Annual BBQ in covered bays at LWVH Field. (£3.50 pp in advance, please)

July 31 Portable events by TDARS in 2019-Debrief. + 10 Minute Talks

August 7 Committee Meeting and GX3ZME on the air. (7:30pm CM)

August 14 HamFest & Buildathon Preparation. Please try and be available to assist

August 21 Local walking DF Hunt #3 (final). Start LWVH at 7:30pm 144.600 MHz FM

August 28 Final HamFest Preparations—Jobs for The Boys (and Girls)

August 31st / September 1st Telford Buildathon & HamFest at Harper Adams Uni

For Amateur Radio Exam Training—enquiries to Mike G3JKX (01952 299677)

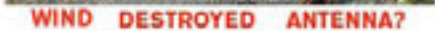
For Morse Training and Morse Proficiency Tests Martyn G3UKV or Eric M0KZB.

For Equipment Loans & Returns contact Don M0TBQ.

Radio Amateur Exams- Latest: www.tdars.org.uk/html/training.html

Editorial

Reading the article in June RadCom (Pg 82<) by Richard Thomas G4JJP who frankly 'rubbed' many smaller, local clubs as 'desperately outdated' in their structure. He talks about 'Participant' and 'Associate' members, which have always existed in most organisations. '**Participant** members join, pay and organise', whilst '**Associates**' identify with the aims, but 'don't join, don't pay and don't help with the organisation'. I can see where the author is coming from, but I'm not so keen on his generalisations, or his solution of amalgamating local clubs and replacing them with regional clubs. It would be great if every radio amateur/SWL in our area joined TDARS, but realistically it has never happened, and never will; but we have quite a few 'Associate' members of the club who contribute in their own way to our aims and activities, even if they only occasionally attend meetings or pay a sub. Long may they continue to support us, and perhaps even pay a sub in this our fiftieth year!



Paul M0PLA: "... and I thought Tywyn was bad HI HI "

MIV

Committee: Brian G6UDX; Graham G7LMF; Ian M0IRP; Village Hall Committee Liaison officer Martin 2E0TRO.
QSL Manager Paul M0PNN; **Assist Curator:** Chris 2E0EOH; **Trophies/Certs:** Martyn G3UKV.

Qtc: News & Information



TDARS MEETINGS EVERY WEDNESDAY AT LITTLE WENLOCK VILLAGE HALL UNLESS INDICATED OTHERWISE ON THE FRONT PAGE PROGRAMME. ROOM BOOKED FROM 7PM - 10PM.

MEETINGS USUALLY COMMENCE AT 8PM

Please note: A current membership card may be required to borrow TDARS equipment. Please return borrowed equipment promptly .

Subs for 2019-2020 now overdue if you haven't paid. Normal subscription £30, non-earners £24. Cheques payable to "TDARS" or cash to Paul M0PLA, Hon. Treasurer. Only a handful of members from 2018 haven't crossed Paul's hand with silver.

The Annual Telford Hamfest and G-QRP Convention, as well as the G-QRP Buildathon, will take place on Saturday/Sunday August 31st and 1st September 2019. The premises have been carefully measured and assessed, and look almost perfect. Invites to Traders and Exhibitors have gone out, and replies are slowly trickling in. As in previous years, there will be a Bring & Buy Stall for visitors, indoors and outside stands, ample seating and fresh food, Club sales stand and special interest groups. It has also been proposed (by Solihull Club) to have a central meeting point so that members of all radio clubs can meet up and share ideas and projects. Overall reaction so far—very positive from all quarters.

At the annual LWWH Quiz in April, Kevin G8UPF plus Peter M1FGN represented TDARS on all our behalfs. They won the top prize that evening, even though other teams had up to four members. Amazing and Congratulations, lads !



Following the LWWH AGM recently, it was decided that TDARS would no longer be expected to pay 50% of the Broadband Internet connection, which started when the Village Hall was finally connected a few years ago. This will represent a saving to TDARS of about £24 each month, although the VH Committee reserve the right to increase all hire costs at some time to offset these new (and welcome!) arrangements.

Paul M0PLA has invited any club member to join him on his **Summits on the Air** endeavours (SOTA), which usually take place on a Saturday morning. Just contact Paul for details of his next summit(s), and make the necessary arrangements to join him.



Likewise, **the microwave group regularly go portable**, usually on the Brown Clee (IO82QL) using G3ZME/P, mostly using the 5.7, 10 and 24 GHz uW bands. These events take place throughout the summer months, mostly on Sundays. As car access is via a locked gate, a rendez vous is essential, unless you intend to ascend the summit on foot or by bike. Contact Martyn G3UKV or Paul G8AQA if you would like to join us anytime to find out about uWaves.



telfordhams

Amongst many items of **A.R. equipment donated to the club** by Arthur G1KRU, who has had a 'clearout' are antennas, two PSUs, a handheld and Alinco HF Transceiver (DX77). The committee are intending to prepare this rig, plus matching antenna and MFJ ATU for lending to members to operate—very useful for newer licensed members. Other items may be sold to members in due course. Contact Simon G0UFE for further information.

**Thanks for Newsletter input this time:
Paul M0PLA, Simon G0UFE, Paul G8AQA, Paul M0PNN,
David M0YDH, Don M0TBQ, Don M0FHM,**

**Next edition Aug/Sept : 2019
Please keep it coming—contributors make the difference!**

From the past . .

25th TDARS Anniversary—Wrekin View venue (Ketley Bank 1994). Name those 50!



**These 3 photos taken from
around 2006/2007 :
(M1RKH, G0EYX and ladies)**



But this oneG8VZT



As mentioned in the Editorial, TDARS won the RSGB Region 13 (West Midlands) **Club of the Year award for 2018**. This was announced at the RSGB AGM in April. The large trophy has been placed on the trophy shelf in our meeting room. Our club now goes forward to the National CotY award ceremony that takes place at the National HamFest in Newark (Sept. 28th).

Heather MOHMO also attended the National Society's AGM in B'ham, to receive the **Courtney-Price Trophy** for "most outstanding technical contribution to amateur radio in 2018....for the GNU Radio Companion workshop at the 2018 RSGB Convention" last October. Her photo appears, alongside co-winners, on page 34 of the June RadCom. Congrats. Heather from all at TPARS.

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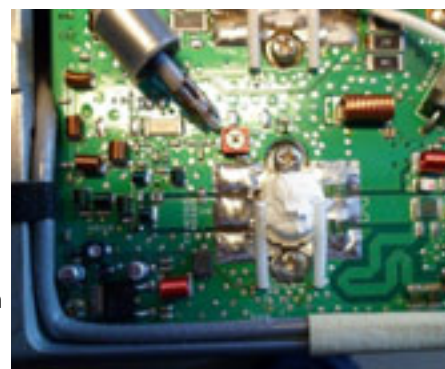
Device in place

FT857 Repair—by Paul G8AQA



The photos show the replacement of the VHF/UHF PA transistor in an FT857. The devices are unobtainable from the reputable suppliers so a “new” one was purchased from Ebay. It turned out to be secondhand as can be seen from the photo with the device in place before soldering. I did manage to get a refund, but decided to fit it anyway and see what would happen. I could not get it working properly so took it to Castle Electronics who eventually found that one or more of the chip capacitors was faulty. Apparently these particular ones usually fail when being replaced. The device itself however worked. You can only just see the chip capacitors each side of it. These capacitors are unobtainable but there are difficult to get RF devices that will substitute. Castle Elec- of unobtainable parts so they come highly recommended.

The radio failed mid QSO with a VSWR better than 1.1:1. It seems that these old radios have a propensity to fail in normal use. I had a similar problem mid QSO with an FT817 with the old style bipolar PA unit. This one took out the PA along with the drive transistors. Again the VSWR was being monitored and was good. Yaesu have modified the design of both radios, presumably because of the problems.



After—with chip Caps.

Telford Balloon Fiesta 2019 by Simon G0UFE

Back in February I was contacted by Jodie Lloyd from Telford & Wrekin Council asking if we were willing to put on a Special Event Station for this event; we had operated at the same event last year. I put it to the members of the club, to find out who would be willing to help man this station, and about 12 members volunteered.

The year before Heather M0HMO and Paul G8AQA had put an experimental payload on one of the balloons, which included GPS, height, temperature plus some others. On asking them to do the same again they agreed, although it meant getting up at stupid O'clock (5am).

The Balloon Fiesta was on the 11th and 12th of May and I got up at 0530 and started to put the required items on my van including the mobile mast. We had all agreed to meet at the rear entrance to Telford Town Park at 0700 because we had a limited time to set-up, all vehicles to be off site by 10.00. The team, to set up the station, comprised of Graham G7LMF, Martin 2E0TRO, Paul M0PLA, Brian G8UDX, Don M0TBQ, Mike 2E1IKE, Chris 2E0YYB, Ian M0IRP and myself with John M0JZH coming later in case we had forgotten anything.

Saturday early morning started very windy, so only 3 or 4 balloons took off, luckily Heather got the payload on one. Heather came back later and put up a big TV to show the balloons course. It was a warm sunny day with lots of things to see and we had some interest from the public who sometimes stopped and then quickly moved on and others who did show some interest.

Saturday evening there was just John and me left, so we watched the 'afterglow party' with our good friend Glenn. Through the night was down to John and me, again, to stop and look after the equipment. It was one of the coldest nights I have ever known, even with a good sleeping bag and a gas heater, which kept freezing up, it was COLD.

Sunday morning at about 0530 we got up and went outside because it was warmer than inside the tent. There were about two hundred people already around the arena watching the assembly and preparation of the balloons, Paul AQA had come in and put the payload on another balloon. A clear blue sky and no wind meant there would be lots of balloons being launched; in fact over 20 took off around 0700 that morning and what a sight it was to see !

After breakfast we started to see more and more people coming past, the press release said that about 55,000 people had attended the event over the two days.

Two highlights of the weekend were an ex navy radio operator came into the tent and started to decode some CW which was on. He didn't think it was still used.

The second was a young lad from near Leominster who came with his mom to ask us if we could help him with his reception; he couldn't hear anything with his handheld TRX. John and I said that he needed a better antenna than the 'rubber ducky' he'd got. John then gave him a 'Slim Jim' he'd made from some 450ohm ladder line. The smile on that lads face was priceless. At about 1630 we started to pack up and head home. We had a great time over the weekend and met some great people. Will we do it again next year ????

~+

Amateur Television from Brown Clee—M0YDH/P, M0HMO, G8AQA/P, G8VZT and others. Weekend of 14th May 2019.

A 24GHz world record was broken, a lashed-up, untested 5.6GHz ATV set-up worked, the weather was fine and a good time was had by all.

On **pages 7 and 9**, more pictures showing detail of equipment, people and conditions involved.

The world record distance of 126.6Km on 24GHz was achieved by Noel G8GTZ and Dave G4FRE portable on Brown Clee (IO82QL83) across to Tony G4CBW/P (using G3NWR/P near Bolton) in IO83SO46. Heather M0HMO was using 5.66GHz band drone-type RF equipment to complete 2 X ATV on that band, along with Dave G8VZT and David M0YDH. [Hope I got details right! - Ed]

Moon Bounce (EME) by Paul M0PNN

I can remember reading a guide to shortwave radio forty years ago detailing Moon Relay, or, Operation Moon Bounce, a telecommunication project carried out by the United States Navy. Its objective was to develop a secure and reliable method of wireless communication by using the Moon as a natural communications satellite — a technique known as Earth–Moon–Earth communication (EME).

Amateur radio operators in the USA and Europe with massive antenna systems and high power had also used the moon as a reflector to make contacts using CW. I found this fascinating the engineering involved, the power needed, the receivers etc. These were the people pushing the boundaries of what was possible at that time.



Let's move on some forty years and things have changed somewhat.

Computer modelling of antenna systems, better receivers and JT65B mode.

JT65B mode is part of WSJT (Weak Signal Communication, by K1JT) software package from American astrophysicist and Nobel Prize in Physics Laureate Joe Taylor K1JT. Joe Taylor first obtained his amateur radio licence as a teenager, which led him to the field of radio astronomy.

Download the software from here:

<https://physics.princeton.edu/pulsar/k1jt/>

Using JT65B I have received and decoded signals at -29dB and sometimes -31dB. If you fancy a go at decoding a JT65B signal, try GB3VHF details on how-to here:

<http://www.gb3vhf.co.uk/GB3VHFReceiving.html>

WSJT setup guide. <http://www.bigskyspaces.com/w7gj/JT65.pdf>

EA6VQ has an interesting article on his website "You are only 7 steps away from making your first Moon Bounce QSO! Keep reading" <https://www.dxmaps.com/jt65bintro.html>; this piqued my interest - would it be possible with 100 watts on 144Mhz to have a QSO via the moon?

First, I needed more power the FT857D was not going to cut it here. Luckily Derek G0EYX was selling his Icom IC-910, so I bought it. I had already built and installed two eight element LFA antennas for the 144 MHz band. To this I added a homemade DG8 preamp.

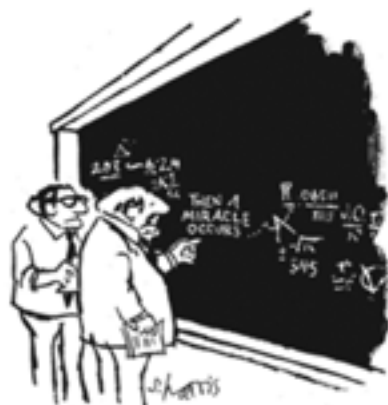
Considering where I live, I do quite well on 144Mhz: 32 countries worked with the best dx EA8TX via Tropospheric Ducting. You can see a video of me receiving him after working him here.

<https://www.youtube.com/watch?v=JeZxrPLuowM> . I was soon hearing and decoding signals from the Moon I2FAK, HB9Q, UA3PTW. The problem I have is local noise and not being able to

elevate the antennas to reduce it. A short window to work at Moon-rise and Moon-set did not help. Well, 144mhz EME may be possible, but not easy; the received signal was just not strong enough my end. Back to the drawing board then.

Didn't some famous bloke once say." We choose to go to the Moon in this decade and do the other things, not because they are easy, but because they are hard". I like to think of it differently.

I am not clever enough to grasp how hard it is, so I will just hit it with a big hammer until it works.



"I THINK YOU SHOULD BE MORE EXPLICIT HERE IN STEP TWO."

<<<<< The Calculations for QRP EME . . .

70CM or Bust

I have been following the experiments of Tom M0ABA and DL7APV Bernd. Tom has completed a QSO with Bernd via the moon with just the bent dipole (driven element) of a DG7YBN Yagi and 60 watts: impressive stuff.

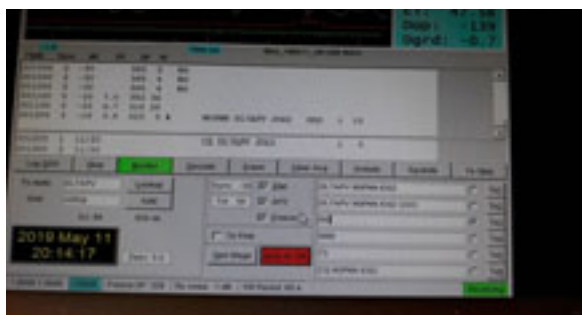
DL7APV Bernd has a big antenna array 128 x 10 element DG7YBN Yagi antennas .
Bill of Materials. Booms alone 384 m of 20 x 20 x 2 mm, weight 150 kg,
Elements 390 m of 4 mm Aluminium rod, open feed-Lines 224 m of Cu-wire 4 mm.
Concrete base 10 tons, Steel approx. 2400 kg of construction tubes and bearings.
http://www.dg7ybn.de/DL7APV_array/128x_GTV70_11w_by_DL7APV.htm

I built an 18 element 70cm LFA Yagi last summer and tested it on 70cm EME and heard DL7APV Bernd at speaker copy - he was that strong. Adding a Mini 70 mast head preamp helped bring the signal up as well.

Jim G8UGL had been intending to build an 18 element LFA for 70cm and I could not resist buying the element clamps from the Telford Hamfest last September. This Spring, with the weather being so nice, I built the second 70cm LFA. I bought a power combiner from John G4ZTR and thought about how I was going to mount this stuff. I dug a hole in the lawn (Wife out) and concreted a socket in about 63mm wide with a broken slab in the bottom. The upright section is a six-foot aluminium pole with a cross over mount with another six-foot pole at a right angles to it. The antennas mounted on that pole—see picture for more info. The antennas are fed with Westflex 103: Yes, I had SWR problems due to that (LDF-450 wanted !):

I will let you guess how I sorted it. **NOW, WHERE'S MY HAMMER?**

The 5th A.R.I. Italian EME Trophy 2019 was taking place on the 11th of May. I set up everything and waited for the moon to get high enough (out of the noise) logged onto EME chat and monitored eme cq looking for [DL7APV Bernd cqing](#). No sked—I wanted to call him for a random QSO. I found DL7APV Bernd CQing—his signal was very loud and speaker copy -13 dB best. I called him and on the second attempt, he came back to my call.



11/05/2019 at 20.20 GMT

I managed to bounce a signal off the surface of the moon. A distance of well over half a million miles there and back. It was received by a radio amateur in Germany. I can confirm that the moon is made of cream cheese. Gromit



~+

E-mail from David M0YDH: (20 May):- “ Just in from Basingstoke is this film that Heather may have already seen. My version of events is on my Twitter account @M0YDH where TDARS members are seen doing random things on a summit before the boss is seen in the White Land Rover. Anyway the wait was worth it and my TV station did its thing rather well for the first time. That's a great relief after hundreds of hours and £. “



International Marconi Day 2019—By John M0JZH

The Tywyn Survivors: John M0JZH, Simon G0UFE,
Don M0TBQ, Paul M0PLA, Speedy 2E0KLS

The one thing about a special event station is that it takes a lot of planning, even if you are replicating a previous years station. So with that in mind and all the preparations done, some things you cannot truly plan for, and in our case this was **Storm Hannah**, rolling over Ireland and hitting the Welsh coast, and we were in its path.

The story starts on the Wednesday before, the lists of equipment required passed to Don M0TBQ and the club stores emptied of the equipment we needed. Radio, antennas, coax, tent, power cables, tuner, amplifier – all sorted.

Simon, Don, Paul, Paul and Heather arrived and set up the station, almost all HF bands covered from 10m through to Top Band, with just two antennas. The club's Comet H422 and Simon's excellent top band and 80m fan dipole. The 2m tent was put up and the radio station installed. Next were the individual sleeping accommodation (tents) for sleeping -> that was the plan! It was about this time that Speedy arrived, he had persuaded someone from St Georges to take him and all of his gear from St Georges to Tywyn. Everyone was surprised to see him. I was last to arrive about 9pm having had a full day travelling from London, via Bangor to take my son back to Uni and decided to sleep that night in the car – wise move.

At the time of my arrival, **GC3ZME/P** was in full swing, Simon G0UFE on the mic and working 40m before moving down and testing 80m and Top Band, the station was working well and on Top Band once again putting out a great signal. I decided to try and get some sleep about 11:30 and I believe the others not long after. At this point the wind was very blustery but nothing that could not be handled. About 12:30am and all hell broke loose. Paul's tent was ruined, Simon's tent on its very first outing was shredded and then Speedy found Simon – the 2m tent was also shredded. Simon and Speedy rescued the gear from the remains of the tent and got it in the back of the van and then tried to sleep in the van sitting up. The winds had reached in excess of 60mph and for us Marconi Day was over.

Daylight arrived and the devastation was very apparent, the tents were beyond repair and there was no way that we could continue. In the still blustery wind and rain, we packed up as swiftly as we could, our hands losing feeling to the cold. By 8:30am we were trying to leave the site without airing **GB8MD** even once. Trying—because although the cars made it to higher ground, Simon's van would not make it, his wheels spinning round and round. We unhitched the trailer – still not enough, in the end we had to push the van off the field. Cold and wet we finally got free. We hoped the emails / telephone calls and facebook posts had reached everyone who had promised to help us enjoy Marconi Day. That left one last thing, breakfast; we stopped in Machynlleth and laughed at ourselves and the events of the last 12 hours.



Tywyn might have beaten us this time, but we will be back again next year.

Thanks to all who helped us to get through, for turning up, and helping. The only piece of kit that belonged to the club that was damaged was the tent – that lasted a further 24 hours before it was very unceremoniously put in the skip. (photos: M0PLA, M0TBQ)

Emitted spectrum from M0YDH/A



Screen grab of G8GTZ taken on Goldthorn Hill, W'pton..

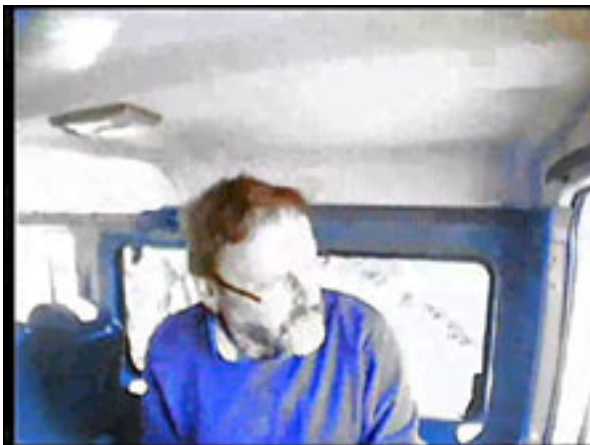
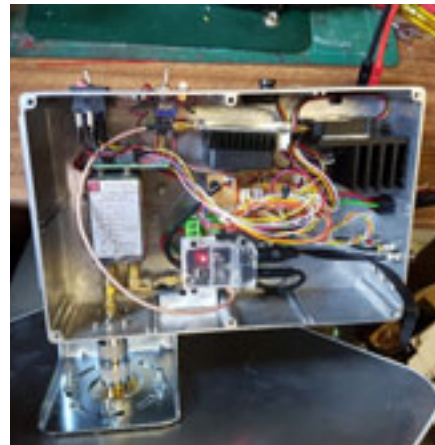


Photo picture 'resizer' by M0YDH

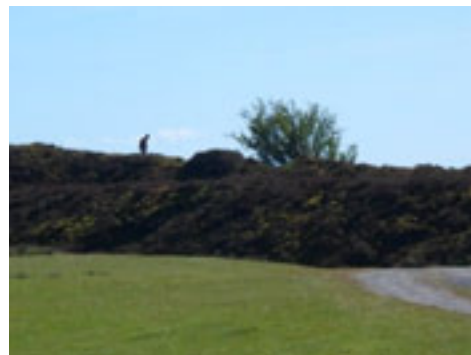


Test-card reception of G8GTZ. >>>>

David's "Photo Essay" of some of his recent ATV activities.



In-tent activity:
Construction competition
Runner-up doing its stuff.



Brown Clee
IO82QL
Summit pictures:
14 May 2019

